CLAIMS

What is claimed is:

1. A method for translating a program stated in a programming language to generate a computer-executable object program using statistical information on variables, the method comprising the steps of:

adding to a program, during the execution of the program in a first round of program translation, a sequence of instructions for performing statistical processing to record into a record a maximum of two sets of values assigned to variables in the procedure and the frequencies of assignment of the values and another sequence of instructions for primary profile output processing to supply information stored in the record as primary profile information after the end of the execution of the program;

storing the primary profile information that has been supplied into a storage unit after the end of the first round of program execution;

reading in the primary profile information and setting the values stored in the primary profile information into the record;

adding to the program, in a second round of program translation, a sequence of instructions for performing statistical verification processing to record into the record the appearance frequencies of values set in the record and the execution frequency of the procedure including processing to assign the values to variables and another sequence of instructions for performing final profile output processing to supply the appearance frequencies and the execution frequency stored in the record as final profile information after the end of the execution of the program,; and

storing the final profile information that has been supplied into the storage unit after the end of the second round of program execution.

2. The method according to Claim 1, further comprising the steps of:

reading the final profile information in;

calculating, in a third round of program translation, the appearance frequencies of the values on the basis of the appearance frequencies of the values acquired from the final profile information and the execution frequency of the procedure including the processing to assign the values to variables; and

processing to achieve optimization into performing an operation predictable from the values when the appearance frequencies are 50% or more.

3. An apparatus for translating a program stated in a programming language to generate a computer-executable object program using statistical information on variables, the apparatus comprising:

a storage unit for storing profile information;

processing means for adding to a program, during the execution of the program in a first round of program translation, a sequence of instructions for performing statistical processing to record into a record a maximum of two sets of values assigned to variables in the procedure and the frequencies of assignment of the values and another sequence of instructions for primary profile output processing to supply information stored in the record as primary profile information after the end of the execution of the program;

processing means for storing the primary profile information that has been supplied into a storage unit after the end of the first round of program execution;

processing means for reading in the primary profile information and setting the values stored in the primary profile information into the record;

processing means for adding to the program, in a second round of program

translation, a sequence of instructions for performing statistical verification

processing to record into the record the appearance frequencies of values set in the

record and the execution frequency of the procedure including processing to assign the

values to variables and another sequence of instructions for performing final profile

output processing to supply the appearance frequencies and the execution frequency

stored in the record as final profile information after the end of the execution of the

program,; and

processing means for storing the final profile information that has been

supplied into the storage unit after the end of the second round of program execution.

4. The apparatus according to Claim 3, further comprising:

processing means for reading the final profile information in;

processing means for calculating, in a third round of program translation, the

appearance frequencies of the values on the basis of the appearance frequencies of the

values acquired from the final profile information and the execution frequency of the

procedure including the processing to assign the values to variables; and

processing means for achieving optimization into performing an operation

predictable from the values when the appearance frequencies are 50% or more.

5. A computer program for translating a source program stated in a programming

language using statistical information on variables to generate an object program, the

program causes the computer to execute processing:

to add to a program, during the execution of the program in a first round of

program translation, a sequence of instructions for performing statistical processing

to record into a record a maximum of two sets of values assigned to variables in the

procedure and the frequencies of assignment of the values and another sequence of instructions for primary profile output processing to supply information stored in the record as primary profile information after the end of the execution of the program;

to store the primary profile information that has been supplied into a storage unit after the end of the first round of program execution;

to read in the primary profile information and setting the values stored in the primary profile information into the record;

to add to the program, in a second round of program translation, a sequence of instructions for performing statistical verification processing to record into the record the appearance frequencies of values set in the record and the execution frequency of the procedure including processing to assign the values to variables and another sequence of instructions for performing final profile output processing to supply the appearance frequencies and the execution frequency stored in the record as final profile information after the end of the execution of the program,; and

to store the final profile information that has been supplied into the storage unit after the end of the second round of program execution.

6. The computer program according to Claim 5, the program causes the computer to execute further processing:

to read the final profile information in;

to calculate, in a third round of program translation, the appearance frequencies of the values on the basis of the appearance frequencies of the values acquired from the final profile information and the execution frequency of the procedure including the processing to assign the values to variables; and

to achieve optimization into performing an operation predictable from the

values when the appearance frequencies are 50% or more.

7. A recording medium storing a computer program for translating a source program stated in a programming language using statistical information on variables to generate an object program, the program causes the computer to execute processing:

to add to a program, during the execution of the program in a first round of program translation, a sequence of instructions for performing statistical processing to record into a record a maximum of two sets of values assigned to variables in the procedure and the frequencies of assignment of the values and another sequence of instructions for primary profile output processing to supply information stored in the record as primary profile information after the end of the execution of the program;

to store the primary profile information that has been supplied into a storage unit after the end of the first round of program execution;

to read in the primary profile information and setting the values stored in the primary profile information into the record;

to add to the program, in a second round of program translation, a sequence of instructions for performing statistical verification processing to record into the record the appearance frequencies of values set in the record and the execution frequency of the procedure including processing to assign the values to variables and another sequence of instructions for performing final profile output processing to supply the appearance frequencies and the execution frequency stored in the record as final profile information after the end of the execution of the program,; and

to store the final profile information that has been supplied into the storage unit after the end of the second round of program execution.

8.   The recording medium storing the computer program according to Claim 7, the program causes the computer to execute further processing:

to read the final profile information in:

to calculate, in a third round of program translation, the appearance frequencies of the values on the basis of the appearance frequencies of the values acquired from said final profile information and the execution frequency of the procedure including the processing to assign the values to variables; and

to achieve optimization into performing an operation predictable from the values when the appearance frequencies are 50% or more.